

REMARKS

This is a full and timely response to the outstanding Action mailed June 17, 2004. Upon entry of the amendments in this response, claims 1 – 12 remain pending. In particular, Applicant has amended claims 1, 4, 6, 7 and 10. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

Indication of Allowable Subject Matter

Applicant appreciates the Examiner's indication of allowable claims. Specifically, the Office Action indicates that claims 1 – 3, 5 and 6 are allowed, that claims 4 and 7 – 12 would be allowable if amended to overcome the rejections under 35 U.S.C. 112, first paragraph. As set forth below, Applicants respectfully assert that the rejection has been accommodated and that the presently pending claims are in condition for allowance.

Objections to the Claims

The Office Action indicates that claims 1 - 12 stand objected to for various informalities. As set forth above, Applicants have amended the claims and respectfully assert that the objections have been accommodated.

Rejections under 35 U.S.C. 112

The Office Action indicates that claims 4 and 7 - 12 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Applicants respectfully traverse the rejection.

In this regard, the Office Action indicates that the specification does not adequately describe the second and third control circuits receiving clock signals as inputs. Applicants respectfully disagree. For example, Fig. 4 depicts the bi-directional control circuits 11 and 15, which correspond to second and third bi-directional control circuits, respectively, in claim 4.

The bi-directional control circuit 15 receives the output signal (N)OUT₂ of the level shifter 42 and the output signal (N+2)OUT₂. The bi-directional control circuit 11 receives the output signal (N-2)OUT₂ and the output signal (N)OUT₂ of the level shifter 41. Since the level shifter 42 amplifies the output signal (N)OUT₁ of (N)th-stage shift-register unit 14 to generate the output signal (N)OUT₂, the logic state of the output signal (N)OUT₂ equals to that of the output signal (N)OUT₁ of (N)th-stage shift-register unit 14. Thus, the bi-directional control circuits 11 and 15 both indirectly receive the output signal (N)OUT₁ of (N)th-stage shift-register unit 14. The output signal (N+2)OUT₂/(N-2)OUT₂ can be supplied by a (N+2)th-stage shift-register unit/ (N-2)th-stage shift-register unit, respectively. The output signal (N+2)OUT₂ or (N-2)OUT₂ can be also an initial pulse provided from other external circuitry. Therefore, in the embodiment of Fig. 4, the output signal (N+2)OUT₂ corresponds to the first pulse signal and the output signal (N-2)OUT₂ corresponds to the second pulse signal in the amended claim 4.

Based on the foregoing, Applicants respectfully request that the rejection of claim 4 under 35 U.S.C. 112, first paragraph, be removed and that claim 4 be placed in condition for allowance.

Regarding claim 7, the first and second clock signals are amended to first and second pulse signals, such that only the clock input terminal of each the shift-register recited in the claim receives the low-voltage clock signal. Support for this feature/limitation can be found in Figs. 4 and 6, for example. Applicants respectfully assert, therefore, that no new matter has been added.

Based on the foregoing, Applicants respectfully request that the rejection of claim 7 under

35 U.S.C. 112, first paragraph, be removed and that claim 7 be placed in condition for allowance. Applicants also respectfully assert that the aforementioned amendment and remarks place claims 8 and 9 in condition for allowance as well.

Similarly, the second and third bi-directional control circuits recited in claim 10 can be found, for example, in Fig. 6. As shown in FIG. 6, the bi-directional control circuits 35 and 31 respectively correspond to the second and third bi-directional control circuits recited in claim 10.

Referring to the specification, the bi-directional control circuit 35 receives the output signal $(N)OUT_2$ of the level shifter 42 and the output signal $(N+2)OUT_2$ and bi-directional control circuit 31 receives the output signal $(N-2)OUT$ and the output signal $(N)OUT_2$ of the level shifter 42. Since the level shifter 42 amplifies the output signal $(N)OUT_1$ of (N) th-stage shift-register unit 14 to generate the output signal $(N)OUT_2$, the logic state of the output signal $(N)OUT_2$ is equal to that of the output signal $(N)OUT_1$ of (N) th-stage shift-register unit 34. Thus, the bi-directional control circuits 31 and 35 both indirectly receive the output signal $(N)OUT_1$ of (N) th-stage shift-register unit 34. The output signal $(N+2)OUT_2$ / $(N-2)OUT_2$ can be supplied by a $(N+2)$ th-stage shift-register unit/ $(N-2)$ th-stage shift-register unit, respectively. The output signal $(N+2)OUT_2$ or $(N-2)OUT_2$ can be also an initial pulse provided from other external circuitry. Therefore, in the embodiment Fig. 4, the output signal $(N+2)OUT_2$ corresponds to the first pulse signal and the output signal $(N-2)OUT_2$ corresponds to the second pulse signal in amended claims 7 and 10.

Based on the foregoing, Applicants respectfully request that the rejection of claim 10 under 35 U.S.C. 112, first paragraph, be removed and that claim 10 be placed in condition for allowance. Applicants also respectfully assert that the aforementioned amendment and remarks place claims 11 and 12 in condition for allowance as well.

Cited Art Made of Record

The cited art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the now pending claims 1 – 12 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,


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